



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 5 : A63B 15/00, 69/36	A1	(11) International Publication Number: WO 93/03798 (43) International Publication Date: 4 March 1993 (04.03.93)
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(21) International Application Number: **PCT/GB92/01514**
 (22) International Filing Date: **17 August 1992 (17.08.92)**
 (30) Priority data:
 239428 16 August 1991 (16.08.91) NZ

Published
With international search report.

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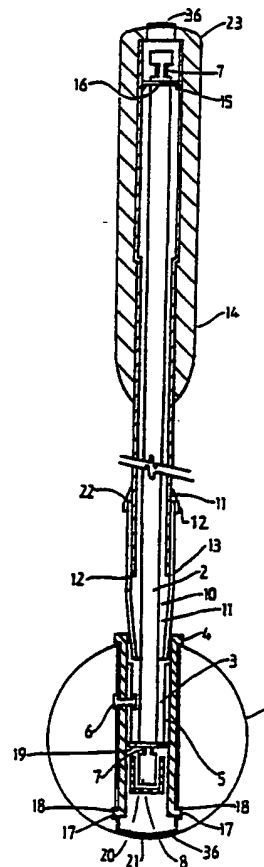
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(81) Designated States: **AU, CA, JP, KP, KR, US, European patent**
(AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT,
LU, MC, NL, SE).

(54) Title: **A GOLF TRAINER**

(57) Abstract

A golf trainer, including a shaft (11), a handle grip (14), a weight (1) and a length of shock cord (2), the golf grip (14) being fitted at one end of the shaft (11) in which one end of the shock cord (2) is fitted, the other end of the shaft (11) having extending therefrom the free end of the shock cord (2) to which the weight (1) is attached so that when the shaft (21) is swung in a golf swing the weight extends the shock cord (2).



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A GOLF TRAINER

This invention relates to a golf practice or training device and more particularly to a device to
5 assist with improving a golfer's swing.

At present, a number of devices are available to improve a golfer's swing. Most of these devices are only suitable for use outside and are not
10 suitable for use within a confined space.

An object of the invention is therefore to provide an inexpensive means of improving a golfer's swing which enables a golfer to practice his or her
15 swing within a confined area, for instance, within the golfer's living room or office.

Further objects and advantages of this invention will become apparent from the following
20 description which is given by way of example only.

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SUMMARY OF THE INVENTION

According to a first aspect of the invention there is provided a golf trainer including a shaft, a handle grip, a weight and a length of shock cord, the golf grip being fitted at one end of the shaft in which one end of the shock cord is fitted, the other end of the shaft having extending therefrom the free end of the shock cord to which the weight is attached so that when the shaft is swung in a golf swing the weight extends the shock cord.

The shock cord can extend through a flexible hose which extends into or onto the opposite end of the shaft. The shock cord can be made of natural or synthetic rubber. The shaft can engage with the hose by a friction fit or be pinched thereto. The end of the hose and the shock cord are fitted together in a known fashion such that they are securely fastened together.

Alternatively the shock cord can extend through a shaped insert fitted within a length of flexible hose or tube which extends onto the opposite end of the shaft, part of the shaped insert abutting or being inserted in the opposite end of the shaft to provide a smooth surface through which the shock cord extends.

The insert can be a plastics or metal insert in the shape of a nozzle the base of which has ribs on its outer surface to frictionally engage with the interior

of the flexible hose, the other end of the shaft contacts the inner end of the insert.

The shock cord can be a length of rubber cord or preferably a stretchable cord built with a plurality of rubber fibres encased in a fabric sleeve.

The weight can be a solid synthetic or natural rubber ball and it is envisaged that any alternative shape of weight may be used. The ball can have a recess forming a cavity in which is fitted an insert. Within the insert is fitted a tubular insert which can be held securely in place by a rivet or the like. The edge of the tubular insert forms an anchor for one end of the shock cord where it is inserted through a washer before a clip is fitted to the end of the shock cord.

The end of the recess in the weighted ball can have a cap inserted to finish the connection.

Alternatively said one end of the shock cord can be held in the tubular insert by forming a knot in the cord and placing on either side of the knot a washer, the washer at the free end of the cord being held in place against a pin positioned through the shock cord.

The other and top end of the shock cord is held in place by means of a washer on the cord against which a clip fitted to or near the end of the shock cord contacts impressions in the shaft which form a barrier or abutment on which the washer rests when inserted

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within the shaft to thereby prevent the shock cord from dislodging.

Alternatively the other end of the shock cord is held in place by forming a knot in the cord with washers on either side, the free end of the cord having a pin inserted therethrough against which one of the washers abuts.

Further aspects of this invention which should be considered in all its novel aspects will become apparent from the following descriptions which are given by way of example only.

DESCRIPTION OF THE DRAWINGS

Figure 1 is a section of an embodiment of the golf trainer device;

Figure 2 is a perspective view of the device shown in Figure 1 in use;

Figure 3 is a side view of a replacement length of shock cord;

Figure 4 is a sectional view of the replacement length of shock cord fitted, in accordance with a preferred aspect, to a shaft with a grip fitted in place;

Figure 5 is a sectional view of the shaft shown in Figure 4 showing the attachment of a ball to the end of the shock cord; and

Figur 6 is a sectional view of the region indicated by arrow A in Figure 4.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

In Figures 1 and 2 the golf trainer has a weighted ball 1 to which a shock cord 2 is fitted. The ball has a recess or hollow hole 3 forming a cavity in which is inserted a hollow plastics insert 4. The insert 4 has a tubular insert 5 therein which is held in place by a rivet 6. The insert 4 is a friction fit in the recess 3 and a shoulder 17 of the insert 4 fits in a rebate 18 near to one end of the recess 3.

The cord 2 has a washer 19 fitted thereon adjacent a clip 7 which is attached near to the end 20 of the shock cord. A button 8 can be attached to the end 20 of the shock cord. The end 21 of recess 3 in the ball is open. The shock cord 2 extends from one side of the ball through a rubber or plastics hose 10 which is fitted on or within a metal shaft 11. On the outside of the plastics hose 10 at the point 22 is attached a rubber collar 12 which acts as a cover and improves longevity of the hose. The shaft 11 is preferably stepped and is manufactured in generally the same manner as the shaft of a golf club and may be cut at one of the steps 13 to create a friction fit with the hose which has an internal diameter slightly less than the diameter of the shaft at 13. Over the shaft is fitted a golf grip 14.

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The shock cord 2 is attached to the shaft 11 at the top end 23 of the golf trainer by means of a clip 7 which is attached to or near to the end of the shock cord. Crimps in the shaft 11 form a barrier 15 to a washer 16 which is placed on the cord 2 before the clip 7 is fitted. The washer 16 when placed within the shaft 11 rests on the inward compressions/barriers and prevents the shock cord from being dislodged.

The weighted ball can be a natural or synthetic rubber or plastics ball. The trainer device when used in the same manner as a golfer would ordinarily use a golf club results in the ball causing the shock cord to extend. An illustration of the golf trainer in use with the shock cord extended is illustrated in figure 2. Trials have shown that use of the device gives a golfer more control of his/her swing. The life of the device is greatly enhanced if the shock cord is regularly lubricated with a rubber silicone spray or by using a dry lubrication stick.

In the second construction shown in Figures 3 to 6 similar parts of the golf trainer to those shown in Figures 1 and 2 are referenced by the same numerals. In this construction the golf trainer has a shaft 11 with a golf grip 14. The shaft 11 has fitted in the end 24 a shaped insert or nozzle 25. The insert 25 and the end 24 are inside a length of flexible hose 26. The insert 25 has a bore 27 which is smooth to minimise friction

between a length of shock cord 28 which extends through the bore 27. The insert can have a chromed surface and teeth on its periphery where it contacts the hose 26 to improve frictional contact between them.

The golf trainer has a ball 1 of similar construction to that shown in Figure 1 with a tubular insert 5. The edge of the insert forms a shoulder against which an end 29 of a length of shock cord 30 which is fitted in the manner described below.

Each end of the shock cord 30 has a knot formed therein. On either side of each knot 31 and 31¹ is positioned a washer 32, 33. In use the washers 33 are at the ends of the cord 30 and are locked in position by pins 34. The face 35 of the washers 32 abut respectively the insert 5 and in the shaft 11 crimped regions 15 formed in the surface of the shaft 11.

For maximum efficiency and durability the shock cord 30 should be regularly lubricated with a dry lube stick or with a rubber silicone spray. The cord should be stretched fully when lubricant is applied.

If a cord requires replacement through wear the plastic plugs 36 from the butt end of the shaft 11 and the end of the ball 1 are removed. The cord 30 is stretched slightly and cut. The cut ends of the cord are then removed. A new replacement cord 30 as shown in Figure 3 can then be inserted. The knots, washers, pins and ball are assembled in the same configuration as in

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the old cord. After a knot 31 has been fitted on the end as is shown in Figure 3. The cord 30 is fed through the shaft 11 from the grip end. The washer 32 stops in the shaft 11 where the shaft has been deformed. The shaft 11 is then placed in a vice 37 and the cord 30 extended fully and clamped by clamp 38 as is shown in Figure 5. The ball 1 is then slid over the cord and both washers 32, 33 are placed in position and the pin 34 inserted. The knot 31¹ is then tied between the washers 32, 33 and the knot 31¹ is slid into position against the pinned washer 33. The washer 33 is pressed hard up to the pin and the washer 32 hard up to the ball 1. The end 29 of the cord 30 is held and the clamp 38 released. This allows the cord 30 to slide into the ball 1 and shaft 11. The plugs 36 are then replaced in the grip and ball.

In an alternative construction not shown the end of the insert 25 is dimensioned to slidably engage part way within the bore in the insert 5.

The device can be used indoors for practice without requiring the headroom normally required when swinging a golf club. It therefore offers advantages to golfers wishing to practice or test their swings.

After trials of the device a user will feel the beginnings of a better swing and by following the instructions important muscle memory will develop which is required for a good golf swing.

To accomplish the correct feeling of the device it should be swung so that the ball will start to extend from the end of the shaft at approximately 8 o'clock and further extend at 6 o'clock and carry on extending in a wide arc through the swing, before coming back into the end of the device, resulting in a high finish.

The device will develop a fluent swing. The four main swing faults that will show up if the device is not swung properly are:

FAULT NO. 1

The ball wobbles around (jerky) at the top of backswing

The causes - too quick on the backswing; or

- lack of wrist break (lever) during the swing.

CORRECTION

The backswing should have a smoother action and control is essential. This can be achieved by making sure the wrists continue to break until completion of the backswing.

FAULT NO. 2

The ball hits the ground on downswing, which is a loss of power.

The causes - hitting from top;

- releasing too early; or
- slicing - topping.

CORRECTION

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Hold the wrist break created on the backswing until the hands come back to the ideal lever position, which puts the shaft parallel to the ground and target line. In this position the ball is still attached and will only extend when the lever is released.

FAULT NO. 3

The ball is still attached to the device through impact.

- The causes -
- lack of lever;
 - lack of release; or
 - push or block shot.

CORRECTION

Once in the ideal lever position allow release to happen through the address position. Do not hold ideal lever position through impact.

FAULT NO. 4

The ball touches the players back on follow through.

- The causes -
- keeping head down too long;
 - lack of leg action on the follow through; or
 - collapse of the arms at the finish of the swing.

CORRECTION

After impact let the head turn as the body rotates and allows the back leg to move in a way that the back knee finishes pointing at the target.

Thus by this invention there is provided a golf trainer which assists a golfer in perfecting his or her swing.

A particular example of the invention has been described and it is envisaged that improvements and modifications can take place without departing from the scope and spirit of the appended claims.

WHAT WE CLAIM IS:

1. A golf trainer comprising a shaft, a handle grip, a weight and a length of shock cord, the golf grip being fitted at one end of the shaft in which one end of the shock cord is fitted, the other end of the shaft having extending therefrom the free end of the shock cord to which the weight is attached so that when the shaft is swung in a golf swing the weight extends the shock cord.
2. A golf trainer as claimed in claim 1 wherein the shock cord is extendible and extends through a flexible hose which extends into or onto the shaft to be adjacent the opposite end of the shaft.
3. A golf trainer as claimed in claim 2 wherein the shaft holds the hose by a friction fit.
4. A golf trainer as claimed in claim 1 wherein the weight is a solid synthetic or natural rubber ball.
5. A golf trainer as claimed in claim 4 wherein the weight has a recess forming a cavity which is fitted with an insert, within the insert is fitted a tubular insert which is securely held in place by a rivet.
6. A golf trainer as claimed in claim 5 where one end of the shock cord is anchored in place in the weight by an edge of the tubular insert where it is inserted through a washer, before a clip is fitted to the end of the shock cord, the end of the recess being fitted with a cap.
7. A golf trainer as claimed in claim 6 wherein the

other and top end of the shock cord is held in place by means of a washer on the cord against which a clip fitted to or near the end of the shock cord contacts impressions in the shaft which form a barrier or abutment on which the washer rests when inserted within the shaft to thereby prevent the shock cord from dislodging.

8. A golf trainer as claimed in any one of claims 1 to 6 wherein said one end of the shock cord is held in the tubular insert by forming a knot in the cord and placing on either side of the knot a washer, the washer at the free end of the cord being held in place against a pin positioned through the shock cord.

9. A golf trainer as claimed in claim 8 wherein the other and top end of the shock cord is held in place by means of a washer on the cord against which a clip fitted to or near the end of the shock cord contacts impressions in the shaft which form a barrier or abutment on which the washer rests when inserted within the shaft to thereby prevent the shock cord from dislodging.

10. A golf trainer as claimed in claim 8 wherein the other end of the shock cord is held in place by forming a knot in the cord with washers on either side, the free end of the cord having a pin inserted therethrough against which one of the washers abuts.

11. A golf trainer as claimed in any one of claims 1 to

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6 wherein the shock cord extends through a shaped insert fitted within a length of flexible hose or tube which extends onto the opposite end of the shaft, part of the shaped insert abutting or being inserted in the opposite end of the shaft to provide a smooth surface through which the shock cord extends.

12. A golf trainer as claimed in claim 8 wherein the insert is a plastics or metal insert in the shape of a nozzle the base of which has ribs on its outer surface to frictionally engage with the interior of the flexible hose, the other end of the shaft contacts the inner end of the insert.

13. A golf trainer as claimed in any one of the preceding claims wherein the shock cord can be a length of rubber cord or preferably a stretchable cord built with a plurality of rubber fibres encased in a fabric sleeve.

14. A golf trainer as claimed in claim 7 wherein the outside of the hose is fitted with a plastics film material.

15. A golf trainer substantially as hereinbefore described with reference to the accompanying drawings.

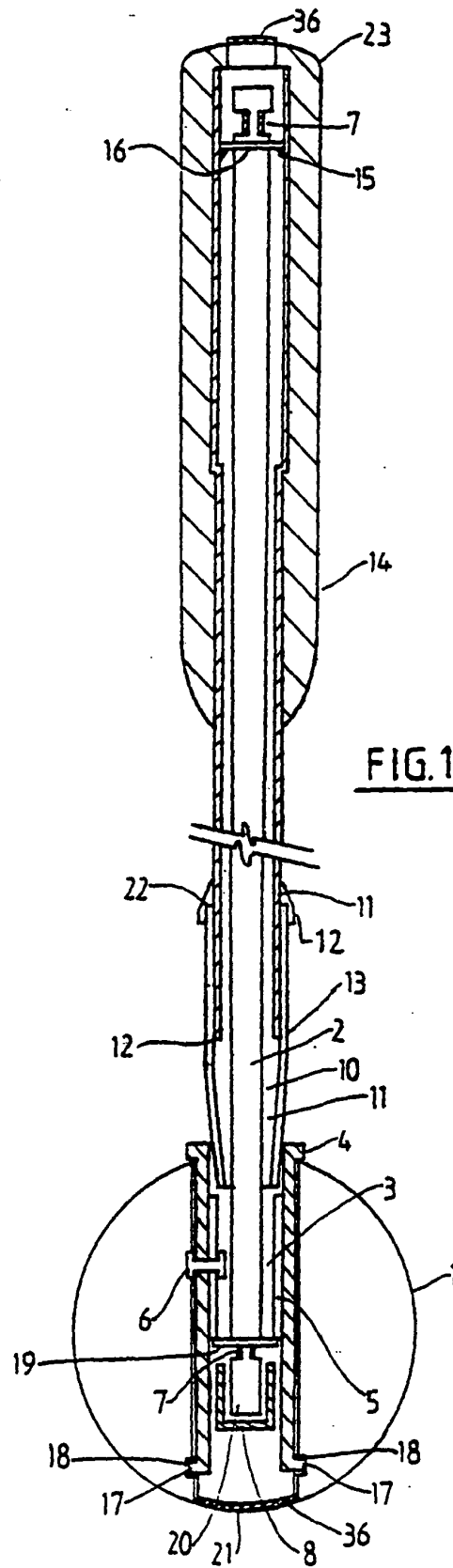


FIG. 1

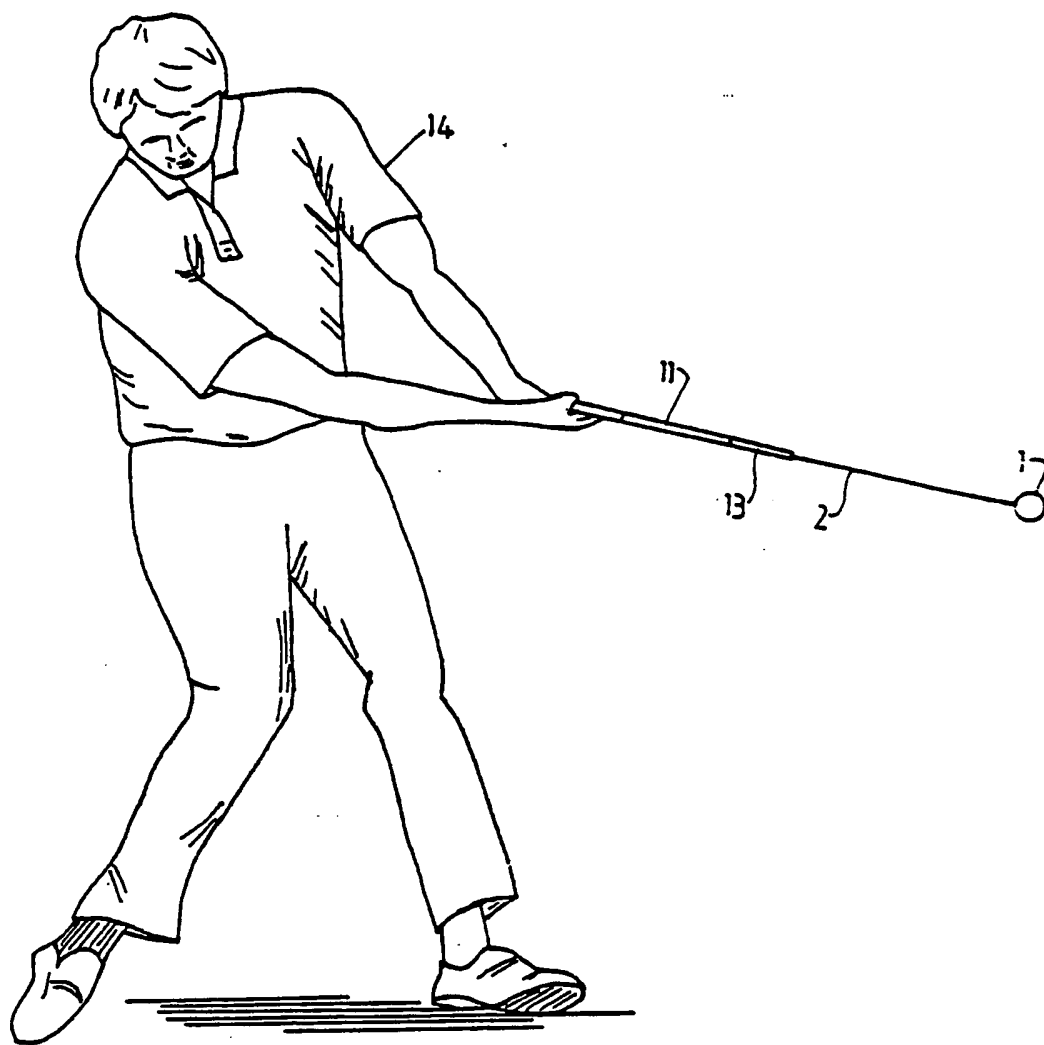


FIG. 2

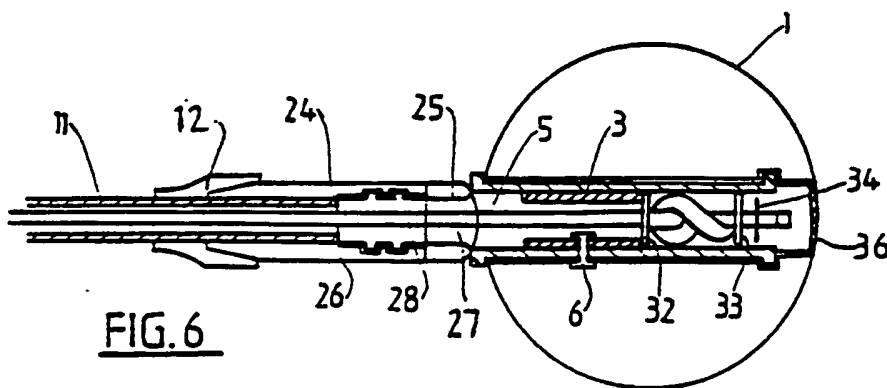


FIG. 6

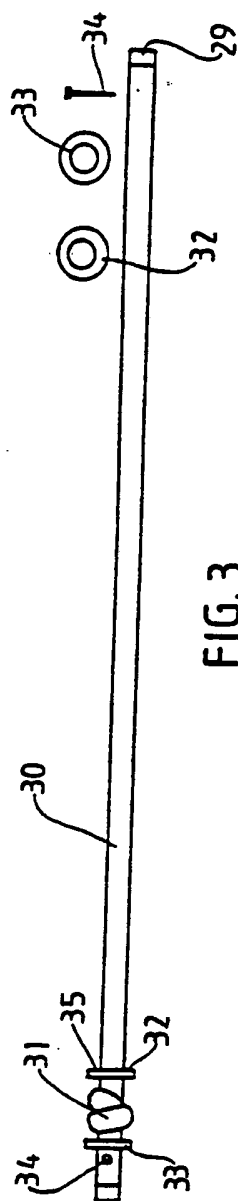


FIG. 3

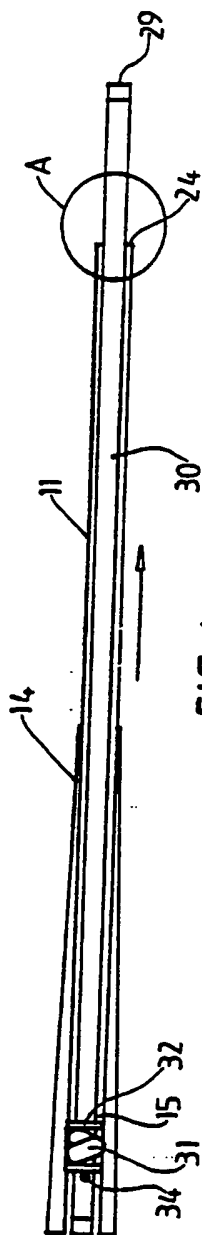


FIG. 4

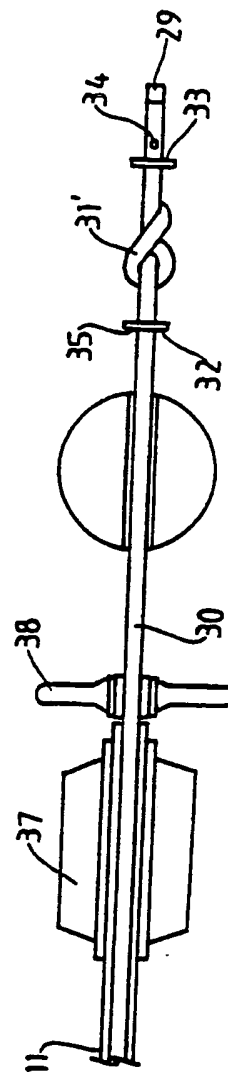


FIG. 5

INTERNATIONAL SEARCH REPORT

International application No.

PCT/GB 92/01514

I. CLASSIFICATION OF SUBJECT MATTER (If several classification symbols apply, indicate all) ⁶		
According to International Patent Classification (IPC) or to both National Classification and IPC		
Int.Cl. 5 A63B15/00; A63B69/36		
II. FIELDS SEARCHED		
Minimum Documentation Searched ⁷		
Classification System	Classification Symbols	
Int.Cl. 5	A63B	
Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched ⁸		
III. DOCUMENTS CONSIDERED TO BE RELEVANT⁹		
Category ¹⁰	Citation of Document, ¹¹ with indication, where appropriate, of the relevant passages ¹²	Relevant to Claim No. ¹³
X	DE,A,3 217 426 (G HINDERER) 17 November 1983 see page 3, line 31 - page 4, line 33 see figures 1-6	1, 4
X	US,A,1 926 921 (E SMYLEY) 11 May 1932 see page 1, line 64, paragraph 92 see figures 1,2	1, 4
A	AU,B,522 662 (A BALLERINI) 17 June 1982	4, 5
A	GB,A,2 108 855 (K RILEY) 25 May 1983	4, 5
<p>¹⁰ Special categories of cited documents:</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> <p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.</p> <p>"A" document member of the same patent family</p>		
IV. CERTIFICATION		
Date of the Actual Completion of the International Search		Date of Mailing of this International Search Report
09 NOVEMBER 1992		19. 11. 92
International Searching Authority		Signature of Authorized Officer
EUROPEAN PATENT OFFICE		VERECKE A.

**ANNEX TO THE INTERNATIONAL SEARCH REPORT
ON INTERNATIONAL PATENT APPLICATION NO. GB 9201514
SA 63223**

This annex lists the patent family members relating to the patent documents cited in the above-mentioned international search report.
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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE-A-3217426	17-11-83	None	
US-A-1926921		None	
AU-B-522662	17-06-82	AU-A- 3909278	28-02-80
		JP-A- 54059553	14-05-79
		US-A- 4192044	11-03-80
GB-A-2108855	25-05-83	None	